Galactose[d]	8.4	6.4	7.5
Glucuronic Acid[d]	4.2	4.3	4.5
Glucose[d]	0.8	0.8	1.0

[a] on a dry weight basis; starting corn fiber was 6.8% moisture
[b] weight average molecular weight (standard deviation of triplicate determinations) using high performance size exclusion chromatography with multiangular laser light scattering and differential refractive index detectors
[c] whiteness index for standard = 83.2 using a Hunter Lab Miniscan XE color analyzer
[d] relative percentages of sugar composition as determined by GLC after acid hydrolysis

The effect of hydrogen peroxide on the color approached its minimum at about 90 minutes. Yields of the corn fiber gum correlate with the pH of the extraction medium as in all cases the total alkali to fiber ratio was 2meq/g. The pH using calcium hydroxide was 9.8, using sodium hydroxide 11.1, and using eqimolar ratios of the two 10.3. The nitrogen levels of the corn fiber gum were less than 0.2%, significantly lower than that of the starting material, 1.63%. The calcium and sodium levels reflect the type of base used for extraction.

The high arabinose/xylose ratios attest to the very high degree of branching on the β-(1→4)-D-xylopyranose backbone. Lower levels of galactose and glucuronic acid were present. There appears to be no significant difference in sugar levels between corn fiber gum samples extracted using different bases. Sugar levels do not appear to differ significantly from that obtained using the process without hydrogen peroxide, indicating hydrogen peroxide has no effect on the monomer composition of the arabinoxylan polysaccharide. The low glucose levels most likely indicates the presence of trace quantities of residual starch; the bulk being removed with the insoluble hemicellulose A fraction.

The molecular weight (MW) values correlate with yield and pH of

extraction medium. It appears that the more extreme conditions of the sodium hydroxide extraction resulted in liberation of a higher molecular weight fraction of corn fiber gum. The corn fiber gum of lowest molecular weight, isolated using the milder conditions of calcium hydroxide extraction, was the most white in color.

Other embodiments of the present invention include:

1. A method for the preparation of hemicellulose B, said method comprising

a) treating corn fiber with a-amylase for a time sufficient for starch to be removed from the corn fiber;

b) mixing treated corn fiber with an alkaline solution to extract hemicellulose;

c) treating the extracted hemicellulose with H_2O_2 at a pH of about 11.2 to about 11.6;

d) separating hemicellulose A from hemicellulose B; and

e) drying hemicellulose B and pulverizing said hemicellulose to a powder.

2. A method for the preparation of hemicellulose B, said method comprising

a) treating corn fiber with a-amylase for a time sufficient for starch to be removed from the corn fiber;

b) mixing treated corn fiber with an alkaline peroxide solution at a pH of about 11.2 to about 11.6 to extract hemicellulose;

c) separating hemicellulose A from hemicellulose B; and

d) drying hemicellulose B and pulverizing said hemicellulose to a powder.

3. The method of 1 or 2, wherein step a) is carried out in the presence of Ca^{2+}.

4. The method of 3, wherein step a) is carried out at a pH of about 6.6 to about 7.0.

5. The method of 4, wherein step a) is carried out at a pH of about 6.8.

6. The method of 5, wherein step a) is carried out at a temperature of about 80°C.

7. The method of 1, wherein said alkaline solution comprises NaOH at a pH of about 11.2 to about 11.8.

8. The method of 7, wherein said alkaline solution comprises NaOH at a pH of about 11.4 to about 11.6.

9. The method of 8, wherein said alkaline solution comprises NaOH at a pH of about 11.5.

10. The method of 2, wherein said alkaline peroxide solution comprises NaOH and H_2O_2 at a pH of about 11.2 to about 11.8.

11. The method of 10, wherein said alkaline peroxide solution comprises NaOH and H_2O_2 at a pH of about 11.4 to about 11.6.

12. The method of 10, wherein said alkaline peroxide solution comprises NaOH and H_2O_2 at a pH of about 11.5.

13. The method of 1, said method comprising treating said extracted hemicellulose with H_2O_2 at a pH of about 11.2 to about 11.8.

14. The method of 1, said method comprising treating said extracted hemicellulose with H_2O_2 at a pH of about 11.4 to about 11.8.

15. The method of 1, said method comprising treating said extracted hemicellulose with H_2O_2 at a pH of about 11.5.

16. The method of 1 or 2, wherein hemicellulose A is separated from hemicellulose B by lowering the pH to about 3.5 to about 4.5 in order to precipitate said hemicellulose A and said hemicellulose B remains in the supernatant, followed by centrifugation or filtration.

17. The method of 16, wherein said hemicellulose B is precipitated from the supernatant with alcohol.

18. The method of 1 or 2, wherein said corn fiber is ground prior to treatment with a-amylase.

19. A hemicellulose B product produced by the method of 1 or 2.